



Welcome to an Open House

In Celebration of the
U.S. Geological Survey's
125th Birthday

USGS Pacific Science Center
400 Natural Bridges Drive
Santa Cruz, CA

September 18, 2004
Noon to 5 p.m.



1879-2004

<http://walrus.wr.usgs.gov/125/>



Welcome to the USGS Open House

About the U.S. Geological Survey

The United States Geological Survey was established on March 3, 1879, when President Rutherford B. Hayes signed a bill appropriating money for sundry civil expenses of the Federal Government. The bill included a brief section establishing the Geological Survey, placing it in the Department of the Interior, and charging it with “classification of the public lands, and examination of the geological structure, mineral resources, and products of the national domain.”

From U.S. Geological Survey Director Chip Groat

For 125 years, the USGS has provided the Department of the Interior, the Nation, and the world with the science needed to make important decisions and safeguard society. I am delighted to have the opportunity to mark this significant anniversary and invite you to join us as we celebrate 125 years of science for America—the mission that has guided us, the people and traditions that have shaped us, the science that has made us great, and the partnerships that will continue to help us achieve our goals for the next 125 years.

About the Pacific Science Center

The U.S. Geological Survey has recently established the Pacific Science Center in Santa Cruz, dedicated to research and scientific understanding of our national coastal and marine systems as they affect public health, safety, and welfare. Our initial research focus follows the broad themes of environmental quality and preservation, natural hazards, natural resources, and information and technology. Ongoing projects concentrate on coral reef health, coastal evolution modeling, coastal watershed restoration, coastal erosion and shoreline change, seafloor mapping and benthic habitats, tsunami risk assessment, sediment contamination, and knowledge management. Future work will follow similar themes with increasing multidisciplinary studies involving geologists, biologists, hydrologists, and geographers. The present staff of about 40 scientists and support staff, all members of the Western Coastal and Marine Geology Team, is expected to grow to more than 100 by 2009.

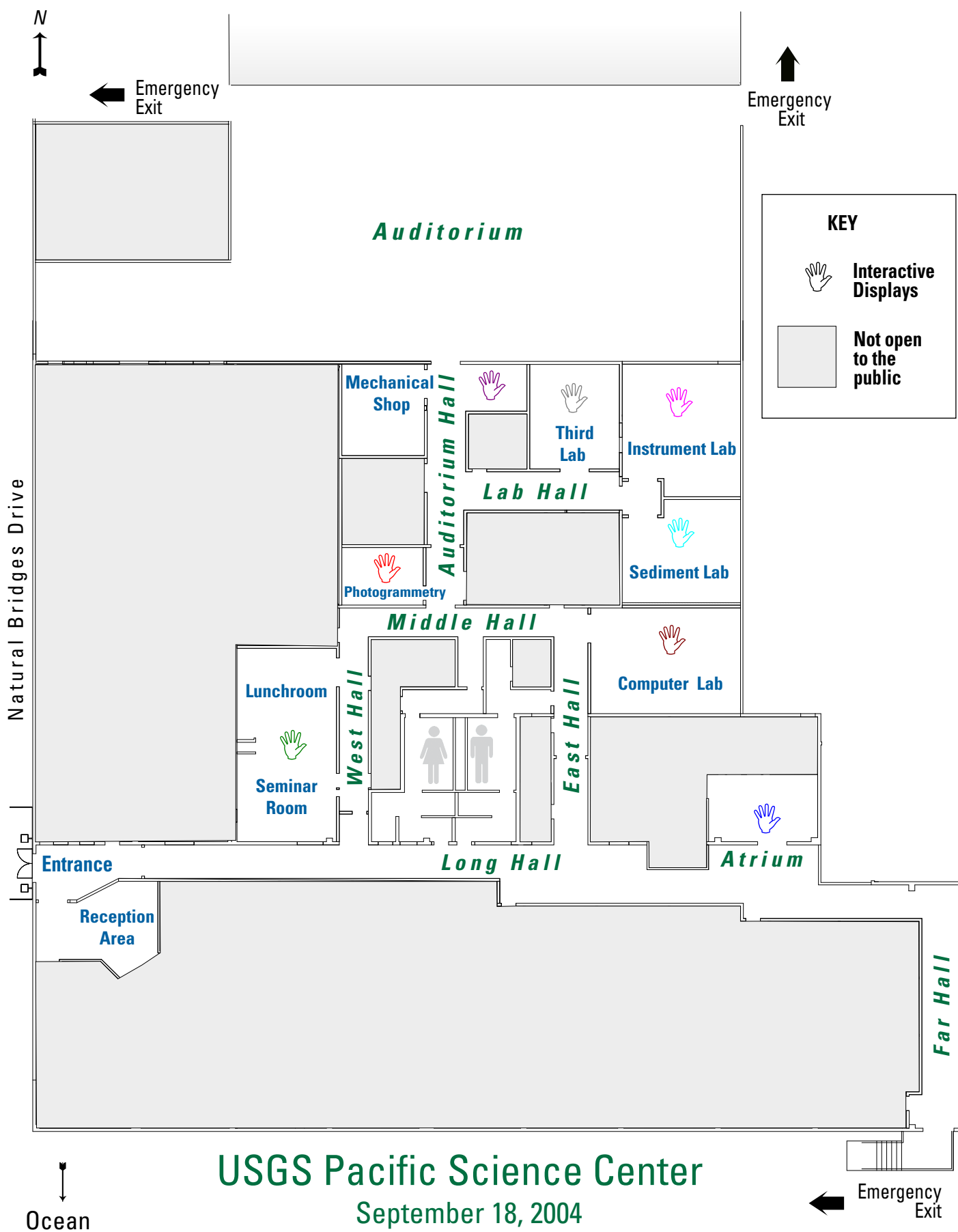
The Pacific Science Center will grow and thrive within the energized and exciting marine science community surrounding Monterey Bay. Locally, the Pacific Science Center is developing partnerships with internationally recognized marine and earth science programs at UC Santa Cruz, and the NOAA Southwest Fisheries Science Center. Regionally, the USGS is a member of the Monterey Bay Crescent Ocean Research Consortium, a partnership of some 25 Federal, State, and private-sector institutes representing a world-class coastal and ocean science community.

Thank you for coming to our Open House. We hope you enjoy your visit and learn about some of the important scientific and public issues affecting our coastal lands and ocean margins.

SAM JOHNSON

Samuel Y. Johnson
Director, Pacific Science Center
Chief Scientist, Western Coastal and Marine Geology







Schedule of Events (in Auditorium):

- 1:00 p.m. Welcome and opening remarks
- 1:30–2:30 p.m. **“Down the Great Unknown”**
One-man play featuring the life of John Wesley Powell and his personal and scientific accounts of the first expedition down the Colorado River through the Grand Canyon in 1869. *Starring Earll Kingston.*
- 3:00–4:00 p.m. Possible second showing of **“Down the Great Unknown,”** if needed.

List of Exhibits (open from noon to 5 p.m.):

Reception Area

125 years of USGS geographic science

USGS Geography Discipline

Long Hall

Framed posters about selected research projects by the Western Coastal and Marine Geology Team

Rex Sanders, Laura Torresan, Bruce Rogers

A Clarence King gallery—the U.S. Geological Survey’s first director

Liz Colvard

How contaminated is the seafloor off Los Angeles?

Homa J. Lee, Marlene Noble, Brian Edwards, Jinping Xu, Lori Hibbeler

Using seafloor photography and mapping techniques to characterize marine benthic habitats

Brian Edwards, Peter Dartnell, Henry Chezar

Saltwater intrusion in Los Angeles area coastal aquifers

Brian Edwards, Daniel Ponti, Kenneth Ehman, John Tinsley, Eric Reichard

Sedimentation and bathymetry changes in south San Francisco Bay: 1858-1983

Amy Foxgrover, Shawn Higgins, Melissa Ingraça, Bruce Jaffe, Richard Smith

Mineral weathering and hydrology of marine terraces in Santa Cruz County, CA

Jorie Schulz

From many to one: usSEABED shows us the seafloor

Jane Reid, Nadine Golden

Digital mosaic of southern Moloka‘i from historical aerial photographs

Pat S. Chavez, Jr., Jo-Ann Isbrecht, Miguel G. Velasco, Michael E. Field

GPS current drifters used to track Hawaiian coral spawning

Curt Storlazzi, Tom Reiss, Gerry Hatcher

Atrium



USGS Coral Reef Studies

Susie Cochran-Marquez



Coral Reef Game

Susie Cochran-Marquez

Parke Snavely, Jr.—Memories of a “Geofacilitator Extraordinaire”

Bruce Rogers

Man-made changes to the floor of San Francisco Bay

John Chin



NOAA Fisheries Santa Cruz Lab

Lisa Wooninck

History wall—Photographs of vessels used by the USGS Coastal and Marine Geology Program

Dennis Mann

Far Hall

A model for reconstructing the history of sediment deposition in San Pablo Bay between 1856 and 1983

Shawn Higgins, Richard Smith, Christopher C. Fuller, Bruce Jaffe

Interdisciplinary science in restoration of south San Francisco Bay salt ponds

John Takekawa, Keith Miles, Nicole Athearn

Suisun Bay and Delta bathymetry: production of a 1-meter grid

Richard Smith, Amy Foxgrover, Peter Smith

Climate forcing of estuarine geomorphology: simulation approaches and initial results

N.K. Ganju, D.H. Schoellhamer, M.A. Lionberger

Desalinization, erosion, and tidal changes following the breaching of Napa salt pond 3

K. Swanson, G.G. Shellenbarger, D.H. Schoellhamer, N.K. Ganju, N. Athearn, P. Buchanan

East Hall

From strawberry fields to the ozone layer: the methyl bromide story

Laurence G. Miller, Shaun M. Baesman, Ronald S. Oremland

Discovery of methane gas hydrate from a mud volcano offshore Los Angeles: effects on sediments and biota

Jim Hein, Brandie McIntyre

Exciting new discoveries of submarine hydrothermal systems, Commonwealth of the Northern Mariana Islands, west Pacific

Jim Hein, Brandie McIntyre

Computer Lab



Flythrough display of Moloka'i coral reef bathymetry

Joshua Logan



Virtual tsunami!

Eric Geist

The future of tsunami research at the USGS

Bruce Jaffe, Eric Geist, Guy Gelfenbaum, Robert Peters

Modern and paleotsunami deposits

Robert Peters, Bruce Jaffe, Guy Gelfenbaum

Middle Hall

Sediment yield from coastal landslides and active slope distribution along the Big Sur coast, Monterey and San Luis Obispo Counties, CA

Cheryl Hapke, Krystal Green

Coastal cliff erosion rates along the Big Sur coast, Monterey and San Luis Obispo Counties, CA

Cheryl Hapke, Krystal Green

Santa Cruz satellite imagery: oblique view of the Monterey Bay area showing onland topography and faults

Gerald Bawden, Sandra Schmitz

West Hall

Monterey Canyon: What happens at the downstream end?

William R. Normark, Jane A. Reid, Andrea Fildani

Seminar Room and Lunchroom

Understanding and predicting large-scale coastal change

Peter Ruggiero, Giles Lesser, Guy Gelfenbaum, Jodi Eshleman

Ocean Beach coastal processes study

Patrick Barnard



Create your own 3D topographic model

Alan Allwardt, Parker Allwardt

Looking for a needle in a haystack—Search for missing instruments in the Monterey Submarine Canyon

Jingping Xu, Marlene Noble, Charlie Paull, Leslie Rosenfeld



USGS Internet resources: a guided tour of USGS Web sites

Alan Allwardt

Photogrammetry Lab



3D display of landslides along the Big Sur coast using photogrammetry

Cheryl Hapke, Krystal Green

Auditorium Hall

Strike-slip along the San Gregorio fault: Santa Cruz and Point Reyes, once close, have drifted apart

Rick Stanley, Paul Lillis

Submarine geologic hazards: examples from Santa Barbara to San Pedro, CA

Michael A. Fisher, H. Gary Greene, Ray Sliter

How seismic-reflection data are collected and interpreted

Ray Sliter, Jamie Conrad, Holly Ryan

How we use seismic-reflection data to map faults off the coast of southern California

Ray Sliter, Jamie Conrad, Holly Ryan



Tapestry of Time and Terrain jigsaw puzzle

David Howell, GeoKids

Lab Hall

Development of a time-series method for estimating seepage from streambed thermal records: examples from California coastal streams

Christine E. Hatch, Andrew T. Fisher, James E. Constantz

Characterizing saline waters with isotopes in the coastal alluvial aquifers of Monterey Bay, CA

Randy Hanson

Geohydrology of recharge and seawater intrusion in the Pajaro Valley, Santa Cruz and Monterey Counties, CA

Randy Hanson

Sediment Lab



Precipice of survival: the southern sea otter

Alisha Kage, Gena Bentall, Tim Tinker, Christine Alfano



Adventures in geochemistry

Bob Rosenbauer, Fran Hostettler, Renée Takesue, Keith Kvenvolden

Instrument Lab



How healthy is that plant? Measuring chlorophyll fluorescence

Greg Piniak



The secret life of seagrass: flow, sediment transport, and *Zostera marina*

Jessie Lacy

Third Lab



Ripples and dunes

Carissa Carter, David Rubin



Digital grain-size analysis using handheld “eyeball” camera

Jodi Harney

Mechanical Shop

Paleoseismology: digging for earthquakes on the San Andreas Fault

Tom Fumal

1989 Loma Prieta Earthquake studies and probabilities of future earthquakes in the San Francisco and Monterey Bay area

USGS Earthquake Hazards Team

Auditorium

125 years of science for America

U.S. Geological Survey



Acknowledgements

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Additional thanks to **Susan Moser**, USGS, for her logistical assistance; to **Bob Kerrins** and the **Veterans Task Force** for their work preparing the physical plant; and to **Denise Smith**, for coordinating and guiding the Celebration.

Final thanks to **Ron Huett**, University Business Park, for his advice and generous assistance in facilitating so many parts of this event.